

REMARKS

Claims 1-12 were pending in this application prior to the office action, with claim 12 being withdrawn. By this amendment, claim 1 is amended. Thus, claims 1-12 remain pending. In addition, the specification is amended to correct a typographical error. No new matter has been added. In view of the above amendments and the following remarks, Applicants respectfully request reconsideration and allowance of the application.

Claims 1, 7, and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hayashi (USPN 5,527,604). Generally, the Examiner asserts that Hayashi discloses a substrate comprising a metal plate (20) and an insulating film (2) which is provided on the surface of the metal plate (20), and that the insulating film (2) includes needle alumina particles (4) and granular particles (5).

In addition, claims 2 and 3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayashi in view of Funada et al. (USPN 6,232,398), and also stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayashi in view of Yamaguchi et al. (United States Patent Application Publication No. US 2004/0266913 A1). Furthermore, claims 4, 5, 6, 8, 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayashi. Finally, claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayashi in view of Murata et al. (United States Patent Application Publication No. US 2002/0003261 A1).

However, Applicants respectfully submit that none of Hayashi, Funada, Yamaguchi, or Murata, alone or in combination, disclose, suggest, or render obvious the invention recited in the claims. For example, independent claim 1, as presented herein, recites a substrate comprising a metal plate, and an insulating film, which is provided on the surface of the metal plate and which consists essentially of needle alumina particles and granular particles. None of the applied references, alone or in combination, disclose the invention recited in claim 1.

The object of the present invention is to provide a substrate, on which an inorganic film with excellent insulating property has been formed on the surface of a metal plate and which can be manufactured on an industrial basis with acceptable efficiency (see, page 3,

lines 12-17 of the instant specification).

The method of making a substrate described in the specification includes the steps of (a) preparing a dispersion solution including needle alumina particles and silica particles, (b) applying the dispersion solution onto a metal plate, (c) drying the metal plate on which the dispersion solution has been applied, and (d) baking the metal plate that has been subjected to the step of drying. The dispersion solution may be obtained by dispersing needle alumina particles and silica particles in water, for example. The dispersion solution may include some organic substances, for example, acetic acid for controlling PH, and/or dispersant for dispersing the particles more uniformly in the solution. However, the amount of the organic substances in the insulating film is very small and the insulating film of the invention is *substantially inorganic*. Therefore, the substrate of the invention can be used for a wiring board which needs to have a heat resistance of 500 °C or more (see, page 3 of the instant specification).

In contrast, the insulating layer disclosed by Hayashi includes an *organic* insulating material. (See, for example, claim 1 and the description on column 6, lines 1-18, of Hayashi). The insulating layer including resins cannot be used for a wiring board which needs to have a heat resistance of 500 °C or more.

Furthermore, Hayashi fails to disclose or suggest using *needle* alumina particles. Instead, one of the main features of Hayashi's invention is that the insulating film includes *flaky* inorganic fillers (see, column 3, lines 46-60). FIG. 2 of Hayashi merely shows the cross-sectional view of the *flaky* aluminum fillers 4 and *spherical* aluminum fillers 5 (see column 7, line 57 to column 8, line 22). Thus, Hayashi clearly fails to disclose or suggest that the *insulating film consists essentially of alumina particles and granular particles* and that *the alumina particles are needle alumina particles*. Funada, Yamaguchi, and Murata also fail to disclose or suggest at least these features.

Therefore, for at least the above reasons, none of Hayashi, Funada, Yamaguchi, or Murata, alone or in combination, disclose, suggest, or render obvious the invention recited in the claims. Accordingly, Applicants respectfully submit that the rejection of claim 1 under 35 U.S.C. § 102(b) in view of Hayashi should be reconsidered and withdrawn.

Dependent claims 2-11 are also allowable based on their dependency on claim 1, and also on their own merits. Thus, the rejections of these claims in view of one or more of Hayashi, Funada, Yamaguchi, and Murata should also be reconsidered and withdrawn.

In view of the foregoing, it is submitted that the present application is in condition for allowance and a notice to that effect is respectfully requested. If, however, the Examiner deems that any issue remains after considering this response, the Examiner is invited to contact the undersigned attorney to expedite the prosecution and engage in a joint effort to work out a mutually satisfactory solution.

Except for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 19-2380. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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